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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,733	02/02/2006	Akira Maenishi	L7002.06101	9734

52989 7590 05/10/2010

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EXAMINER	
AKRAM, IMRAN	
ART UNIT	**PAPER NUMBER**
1795	

MAIL DATE	DELIVERY MODE
05/10/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,733	MAENISHI ET AL.	
	Examiner	Art Unit	
	IMRAN AKRAM	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *9-15 and 18-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-8, 16, and 17 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment. The Komiya reference still applies, albeit in different form.

2. Applicant asserts on page 10 of the Arguments that the water inlet and gas feed inlet of Komiya are not provided with either tubular wall elements **61** or **62**. This may be true, but Komiya also discloses a second tubular wall **68** that surrounds first tubular wall element **61** that does provide the water inlet and gas feed inlets (see rejection below). The tubular space **51**, evaporation portion **51a**, and reforming catalyst body **8** are still located between these two wall elements. Some dependent claim language has been modified due to the amendment.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Komiya (US 2002/0042035 A1).

5. Regarding claim 1, Komiya discloses a reformer **2** that has a cylindrical or tubular shape (paragraph 11) with a first wall element **61** and a second wall element **68** disposed coaxially outside the first wall element (see figure 1); a tubular space **51** exists

between the two wall elements and is provided with a evaporator portion **51a** and a reforming catalyst body **8** in axial relation with one another (see figure 1); a water inlet **20** at the second wall element **68** (see figure 1)**;** and a feed gas inlet **26** at the second wall element **68** (see figure 1). The reformer generates hydrogen with steam and feed gas (paragraph 4). The reformer causes the feed gas and steam to flow from the water evaporator to the reforming catalyst (paragraph 12). While the evaporator portion **51a** is not called an evaporator but a pre-heat layer instead, water is transmitted to the pre-heat layer **51a** via the heating channel **48** and is converted to steam in the process (paragraph 88). Where and when evaporation of the water occurs is process condition–dependent.

6. Regarding claim 2, Komiya discloses that the reformed gas is caused to flow from an axial end of said reforming catalyst body (paragraph 70).

7. Regarding claim 3, Komiya discloses that said water evaporator is disposed under said reforming catalyst body (see figure 1) as this is simply a matter of orientation. The reforming would be fully capable of operating upside-down from that depicted in figure 1 and the apparatus components and positioning would be the same.

8. Regarding claim 4, Komiya discloses that said first and second tubular wall elements are each constructed of a cylindrical seamless pipe (see figure 1).

9. Regarding claim 5, Komiya discloses a burner **18** configured to combust a combustible gas to generate a combustion gas (paragraph 61); and a third tubular wall element **14** disposed inward of said first tubular wall element **61** and coaxially with said first tubular wall element **61** (see figure 1), wherein the combustion gas is caused to

flow in a tubular space which is a combustion gas passage **80** formed between said first and third tubular wall elements (see figure 1 and paragraph 61).

10. Regarding claim 6, Komiya discloses that said burner is oriented to cause a flame to be emitted upward from said burner (see figure 1). Again, this is a matter of orientation, and the apparatus can be turned around.

11. Regarding claim 7, Komiya discloses that said burner is disposed in an internal space of said third tubular wall element **14** (see figure 1), said hydrogen generator further comprising: a first lid element **71** disposed with a gap between said first lid element and an upper end of said third tubular wall element **14** so as to close an upper end of said first tubular wall element **61**, wherein the combustion gas generated in said burner is caused to flow from an interior of said third tubular wall element into the combustion gas passage **80** through the gap (see figure 1).

12. Regarding claim 8, Komiya discloses that the combustion gas flows along the first wall element via passage **80** on its way to a break formed in the first wall element **61** to combustion outlet **24**. Whether this direction is considered “downwards” is, too, a matter of orientation.

13. Regarding claim 16, Komiya discloses a tubular cover **69** that is configured to cover said second tubular wall element **68** and forms a double-walled pipe along with said second tubular wall element **68** (see figure 1), wherein the reformed gas flowing out from said reforming catalyst body (paragraph 70) is caused to flow a tubular space **50** between said second tubular wall element **68** and said tubular cover **69** (paragraph 79).

14. Regarding claim 17, Komiya discloses a rod element **83** disposed at a position of the reformed gas passage to extend in a circumferential direction of said second tubular wall element **68** (paragraph 72), and the rod element is sandwiched between said second tubular wall element **68** and said tubular cover **69** (see figure 1). The rod is considered flexible as it is wound around the tubular element.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IMRAN AKRAM whose telephone number is (571)270-3241. The examiner can normally be reached on 10-7 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/I. A./
Examiner, Art Unit 1795

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795